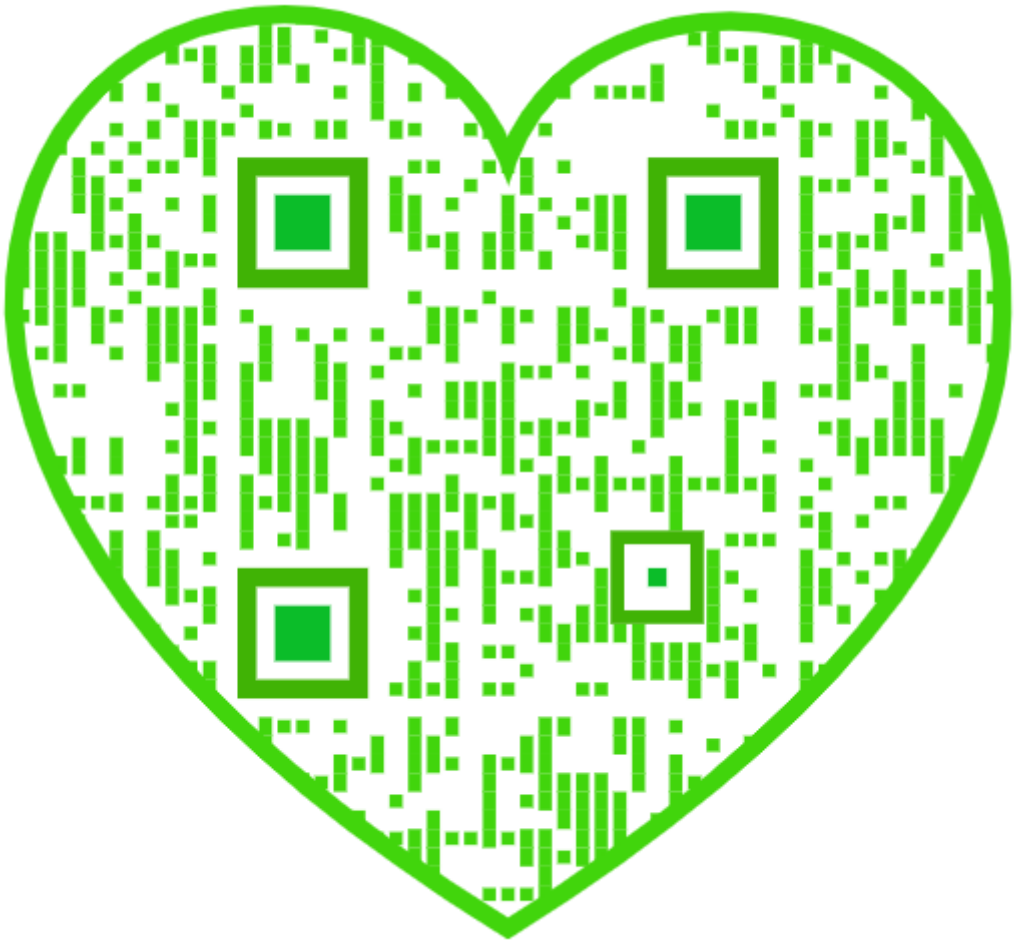

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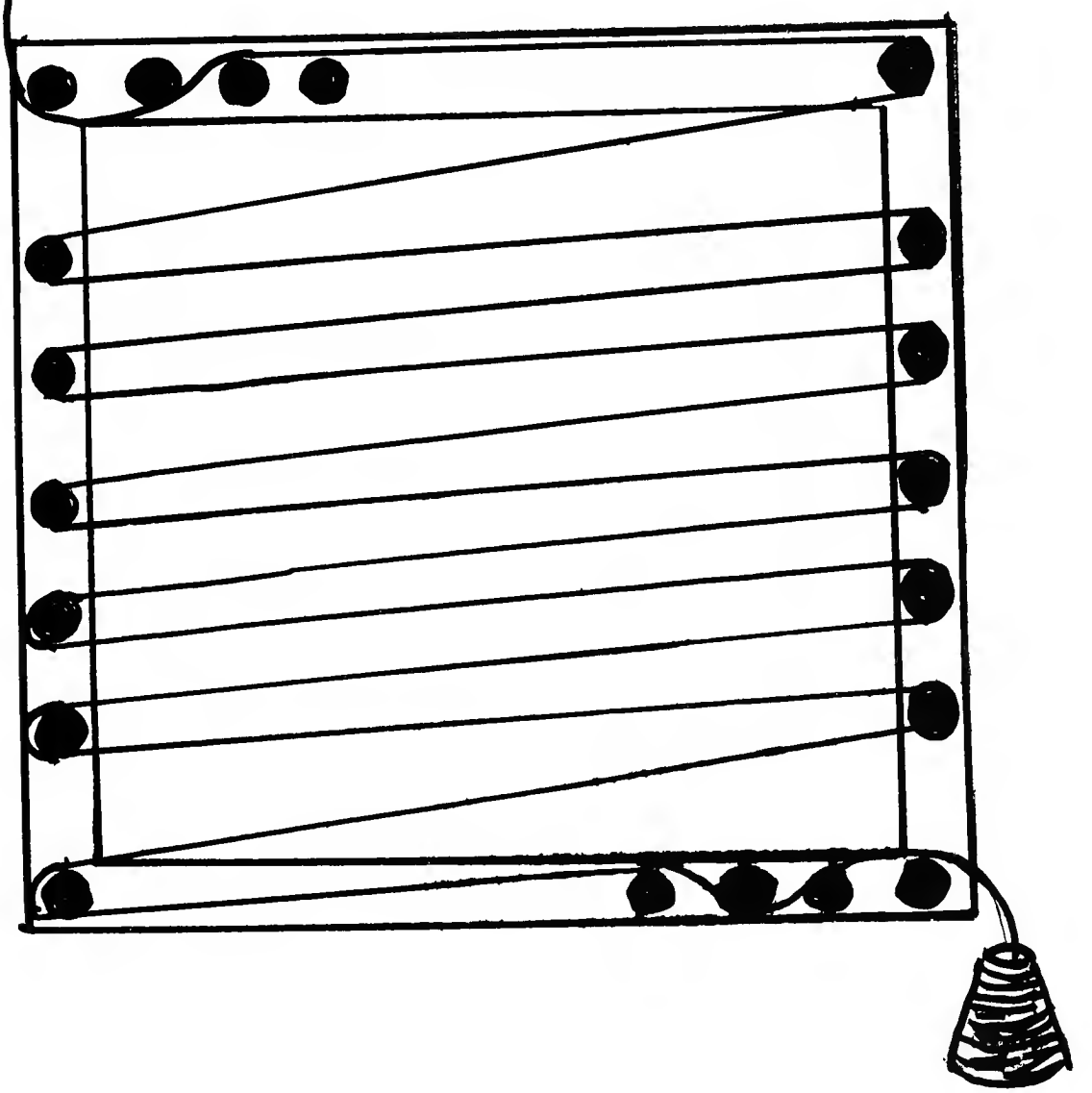
Speed Warping



Text by Janet Nyquist

Line Drawings by Elizabeth Corey Bourquin

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Speed Warping

If you can put four hundred and seventy-one warp ends or threads through the heddle eyes in one hour and ten minutes, and sley these same threads through the reed, two per dent, or two threads through each slit in the reed in twenty minutes, then your method is as good as this. But if it takes you much longer, you are wasting valuable, productive time.

In addition to saving time, an error is seldom made that cannot be corrected before you have gone too far. Speed comes with practice; and very quickly.

First, it is important to be able to put a good warp on the loom by yourself without difficulty. A warping board, large enough to accommodate about twelve yards of warp, is generally sufficient. If a longer warp is needed, I find a convenient chair leg that is far enough away from the board to make the desired amount of warp. A cross is made both at the bottom and the top of the warp. These crosses are called the porrey and portee cross, or the threading and raddling cross.

Start making the warp at the bottom or at the threading cross, as this is the end that goes on the loom last. The cross at the top goes on the loom first, and is called the raddling or spreading cross.

After the warp is completed, both crosses are tied very securely in four places with bow knots, and the choke tie is made very firmly about ten inches away from the top or raddling cross. The choke tie must be very secure so that when raddling or putting your warp ends through the raddle, individual threads stay exactly the same length. The rest of the warp is tied at about yard intervals all the way down the warp. These are also bow ties, but do not need to be as tight as the choke tie, which is at the top. See figure 1.

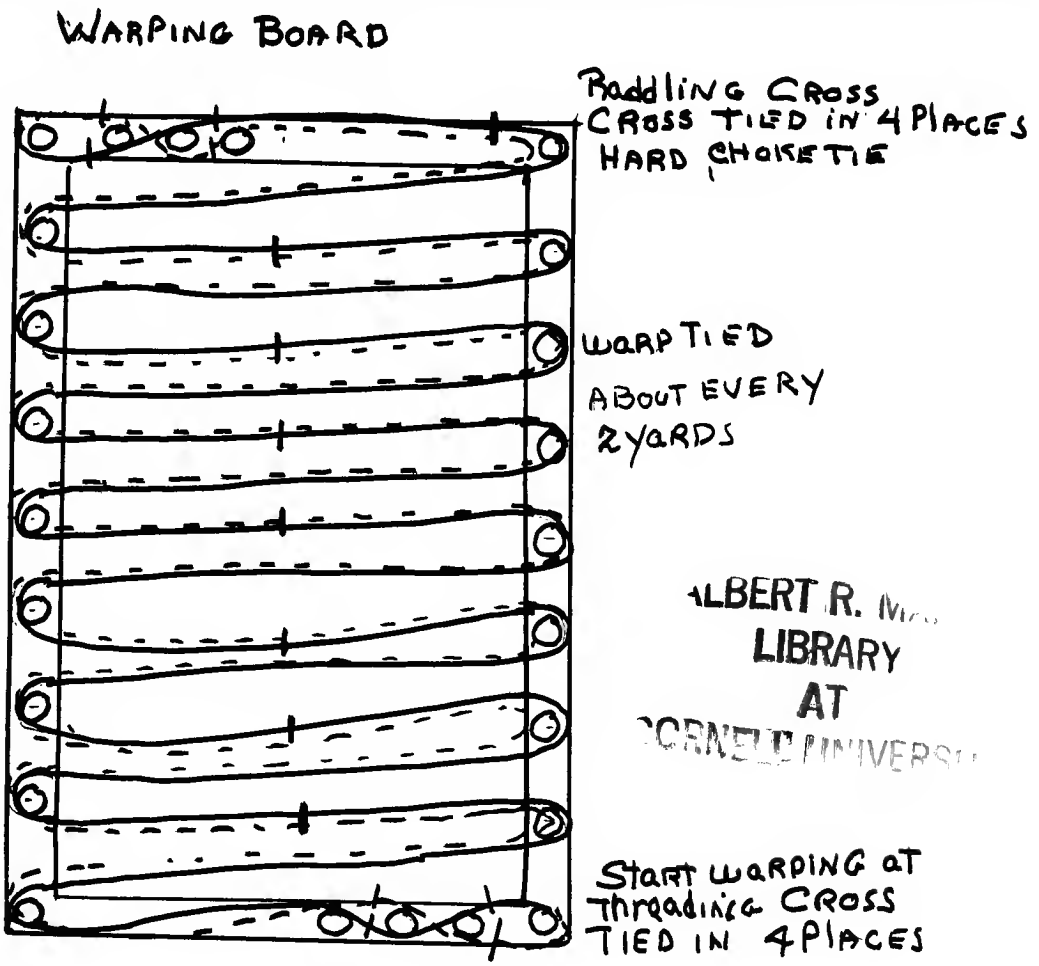

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Fig. 1

If it is not necessary to make a warp using all of the warping board, a cross is made over any one of the side pegs that are at convenient spacing for the desired amount of warp.

It is more convenient to make several warp chains for the same project to prevent crowding on the pegs of the warping board. These can all be tied in the same way and slipped on the lease sticks and the rod, and later treated as one.

Before removing the warp from the warping board, I lay my lease sticks on the table or on the floor along with a metal rod, which is the exact length of the rod on the back beam of my loom.

In order to take the warp chain to the lease sticks, it is necessary to get the warp off the board in some orderly fashion. This is called chaining or crocheting the warp. Wind the end of the warp around the left wrist, palm down. Then, grip the warp with the left hand, use the right hand to pass the loop now on the wrist. Continue to crochet in this manner until the end of the warp is reached, or you have come to the cross. See figure 2, a,b,c,d,e.

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Fig. 2a

Fig. 2b

Fig. 2c

Fig. 2d

Fig. 2e

Before taking the warp to the loom, a raddle, which is like a reed without a top and has spaces every half inch, is secured to the back beam of the loom. This can be tied to the back beam, but it is more convenient to drill through the raddle into the back beam of the loom and drop a nail into a back beam. This is much faster than tying, and prevents the raddle from slipping, and it is much more secure. Also put a two inch piece of masking tape on each side of the loom within easy reach.

Various methods are used to keep the lease sticks from falling out of the cross. The most convenient method is to make short string cradles, which are attached to the castle of the loom so that the lease sticks can be slipped into these immediately. So positioned, they will not fall out of the cross, and are easy to use. See figure 3.

Fig. 3

At this point the chained warp with the lease sticks through the top or raddling cross, and a rod secured in the same cross is now ready to be taken to the loom. The long chain warp is put in a shopping bag or some convenient receptacle so that it does not become unchained in the process of going from the floor to the loom.

With the lease sticks in the cradle, secure the rod that is in the cross to the rod on the back with the small pieces of masking tape that have been pre-cut and are ready to use. Using the tape enables you to work alone because the two rods can be held together with one hand, and taped with the other. As soon as both sides have been secured with tape, tie the ends very securely with cord. The rod at this point is now in front of the raddle. Now untie the crosses and spread the warp in a temporary fashion, just to unbunch the groups and make the next process of spacing easier. The rod is now moved over the raddle to the back of the loom.

The rest of the warp chain has been put through the harness frames and is now at the front of the loom, where it is secured either by wrapping it around the breast beam or weighting the end in order to give tension, so that threads may be selected easily.

The spacing or raddling process is started at the right hand side of the loom. For example: if the weaving width is to be thirty inches, find the middle of the raddle or middle of the back beam, and count to the right fifteen inches. This is the first slot that the first group of threads would enter. If the warp is to be threaded twenty-four threads to every inch, put twelve threads through each slot in the raddle as the raddle is two dents to every inch. If there should be twenty ends per inch, then ten threads would be put through each slot in the raddle. It is important that these threads always be counted from the cross. Use elastic bands every three or four inches as a precaution so that threads cannot slip out of the slots or spaces in the raddle as the spacing proceeds across the raddle.

Raddles can be made by hammering three inch finishing nails every half inch down the length of a hard piece of wood. As all of these nails are to be put in a straight line, it is a very good idea to pre-drill the holes so that the wood does not split. The nails should stick out of the wood at least two inches.

After all the threads have been put through the raddle, straighten them very carefully on the rod, and tie the two rods together in several places. This is very important as you do not want a bowing action when weaving, since the tension in the middle of the warp will become quite loose the nearer you get to the end of your weaving.

The lease sticks are now removed as they have served their purpose in putting the warp through the raddle or spacing the warp on the back beam.

We are now ready to roll the warp onto the warp beam and this is called "beaming;" because the correct name for the warp roller is the warp beam. The weight is now taken off the warp chain at the front of the loom. You will note that we have not yet removed the choke tie.

Holding the warp under no tension, you now begin winding the warp on the back beam. As soon as the rod has caught sufficiently and there is no longer a danger of threads pulling or changing their length, the choke tie is then removed.

Because almost everyone has one arm or one hand that is stronger than the other, you will exert a harder pull on one side of vour warp than vou will on the other, if you or a partner pull while beaming. In this method the warp is beamed without tension, Periodically it is necessary to go to the front of the loom, undo the ties that are around the warp straighten the warp with your fingers or a large comb so that it goes on the warp beam very smoothly. I use fairly sturdy plastic as I wind and I never allow one inch of the warp to overlap another without a piece of plastic. Pre-cut the plastic the exact width of the loom in one yard pieces. This is a simple method of keeping track of how much you have woven.

Wind or beam the warp until the other cross, the threading or porrey cross, is iust behind the heddle eyes. Now insert the lease sticks in this cross, making sure the warp has not flipped over, and is coming smoothly through the raddle. Any sticky, delicate, nasty warp will wind on the warp beam with no trouble, and you have in no way caused any undo friction on your warp. Do not cut the ends of this cross until ready to start threading, as you do not want the lease sticks to have any chance of slipping out. These lease sticks have also been inserted in the cradle, which is your eye level and also level with the eye of the heddle. This prevents unnecessary back strain.

To thread the loom, start at the left side as you face the loom. Take a group of heddles from each harness that represent a fixed number of repeats of your threading pattern. The number that you take is purely arbitrary, but it is convenient to work in the neighborhood of twenty-four heddles at a time. For example: in a four harness twill threaded one, two, three, four, take six repeats or six heddles from each of the four harnesses. Or if one repeat of your pattern is four heddles from harness four, three heddles from harness three, two heddles from harness two, and two heddles from harness one, and you wanted to thread in a repeat of four times this one pattern repeat, take sixteen heddles from harness four, twelve heddles from harness three, eight heddles from harness two, and eight heddles from harness one.

When you have finished threading this group, and you have no heddles left on any of the harnesses, you have made no error. But if you have too many heddles, for example, on harness four and not enough on harness three, you have caught your error within these few threads.

Now push these heddles that you have selected to the left, and put your right hand through the harnesses to the right of these heddles, and pick up a group of warp threads with your right hand. Secure these threads by putting them over your little finger, under your third finger, and over the middle finger. See figure 4. Also grip the heddle hook in the right hand between the thumb and index finger. See figure 5.

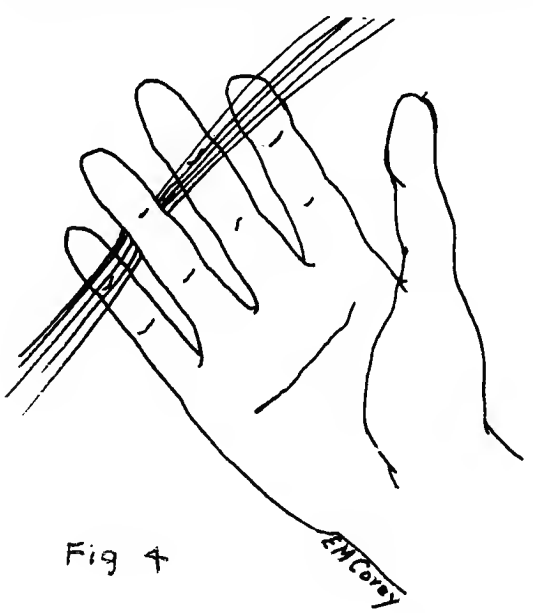

Fig 4

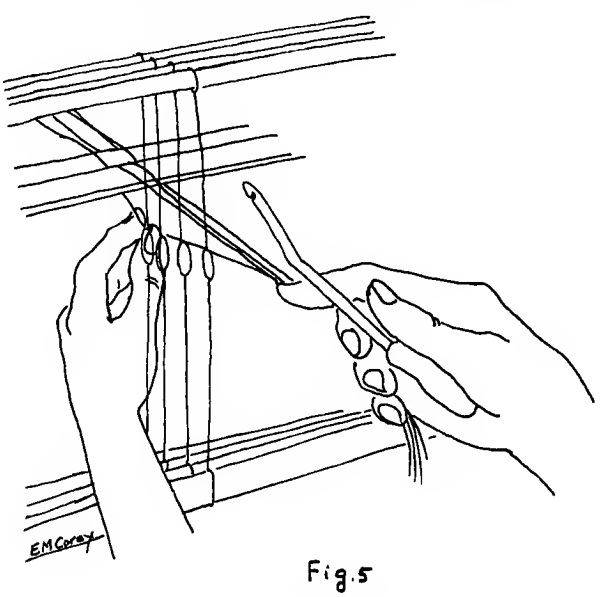

Fig.5

With the threads under tension, take the left hand to the left of the heddle and pick the first thread from the cross. Relax the tension of the right hand and when the left hand comes by the appropriate heddle, put the hook through the eye and catch the thread and pull it through with one motion. It is important that you pull the thread out of the group of threads that you are holding in your right hand. Allow about five inches of warp yarn to be pulled through the heddle eyes.

For the second thread, again pull the threads in the right hand under tension, and when these threads are under tension, your left hand then goes back and pulls out the appropriate thread from the cross. Relax the tension and put the heddle hook through the eye of the heddle and pull the thread again through with one motion. When this group has been finished and all heddles are used, tie with a slip knot so that you can always work in a narrow margin of error. Fig. 6, a,b,c.

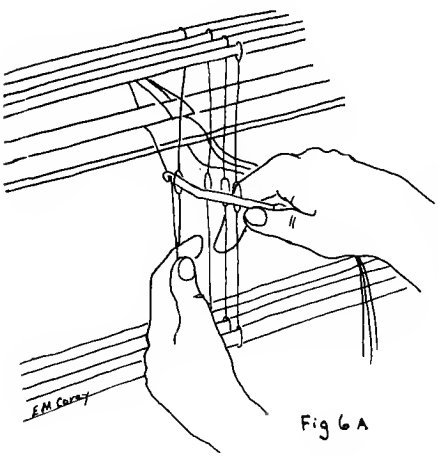

Fig 6A

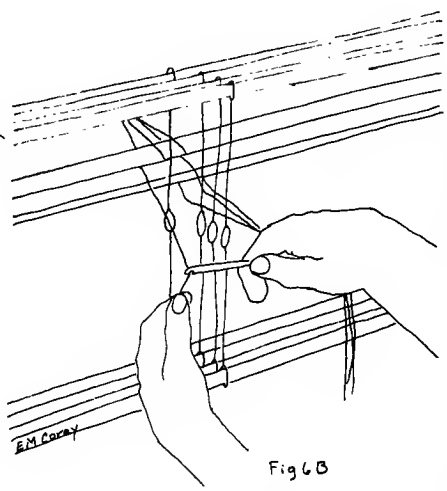

Fig 6B

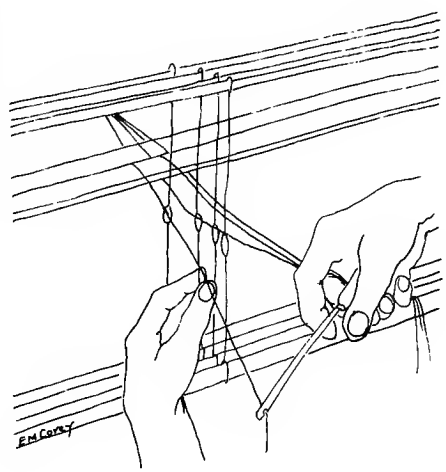

Fig 6C.

After the loom is threaded, secure the beater so that it rests about half way between the breast beam and the harness frame. A wooden piece that slips over the beater and the breast beam is a convenient way to hold the beater in this position. See figure 7.

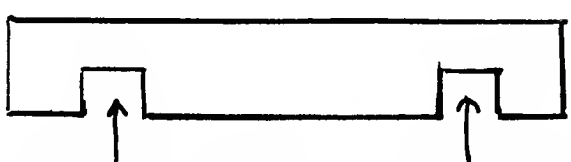

Fig 7.

With the top off of the beater, the reed is secured in the slot in the beater and tied to the framework of the harnesses. This prevents the reed, which is placed in a slanted position, from falling out. See figure 8.

Sleying is started on the opposite side of the loom, or the right hand side. Again measure from the middle to the right hand edge to be sure that your warp is well centered in the reed.

A group of threads is drawn over the top of the reed, and secured in the right hand. A reed hook is put through the outside dent in the reed, (point down), and this is also held in your right hand. With the left hand, select the proper thread as it comes through the heddle eye. Separate this thread so that the reed hook can grasp it. If you are sleying two or three threads per dent, use as one thread. Pull this thread through the reed only so far that the reed hook can slip to the next dent. Fig. 9. Continue in this manner until you have one or two inches of thread on the reed hook, and then pull all of these threads through the reed together. These threads have all been held on the reed hook as you work. See figure 10. a,b

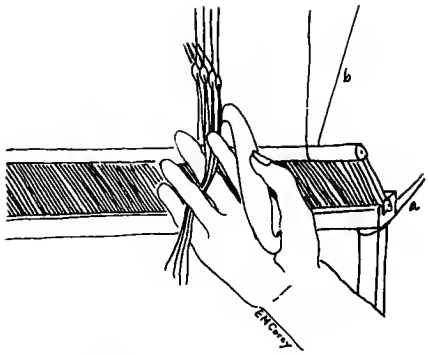

Fig. 8

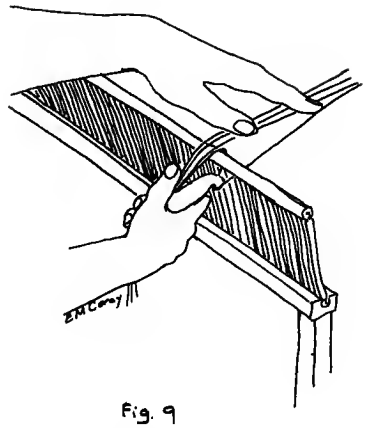

Fig. 9

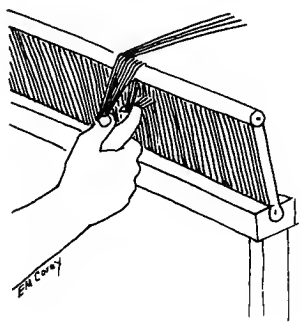

Fig 10 a

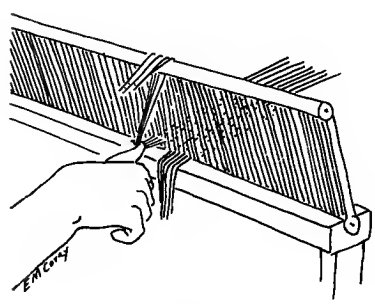

Fig 10 B

Continue in this manner until your reed is all sleyed. Then put the top on the beater, remove the raddle and the lease sticks, and the board made for holding the beater in place.

Threading the heddles and reed is referred to jointly as drawing in or entering. We are now ready to secure the warp to the front of the loom.

It is necessary to equip your loom with string ties, which are made from strong, smooth string, cut in eighteen to twenty inch lengths. Provide a string for every inch of the warp beams.

The beater is now at rest near the heddles and you pull the temporary knot out of the first group of threads that you have bunched together when you were sleying the reed. Run your fingers and thumb firmly down the ends, repeating with alternate hands until all the ends are evenly tensioned. When you are satisfied, stop the fingers about two inches from the tip of the shortest end, and without relaxing your grip, tie the whole bunch together in an ordinary overhand knot as near to the end as possible.

Deal similarly with each bunch of threads until they are all tied in one inch groups- Then bring the cloth rod over the breast beam so that you can now use the strings that have been tied to the rod on the front apron. There will be very little variation in the length of the knots if the warping and beaming have been well done.

The ends, tied one inch groups, are divided in half, forming a loop, which is attached to the double cord of the appropriate tie string with a single overhand knot.

Tie the two outer knots first to hold the cloth rod in place, then tie the other groups, and make no attempt to tension evenly.

Be sure that you have left sufficient string so that the tension may be adjusted easily.

Now, go to the back beam and rewind the extra warp with which you have been working. In order to secure your warp and even the tension, grasp the two ends of the cord that have been put through the loop (that is the cord that is attached to the beam). Pull on both ends and move the knot down to meet the warp knot. It is not necessary to make a double tie. You can work back and forth across your warp without having to undo any of the ties; you simply pull forward and tighten each single knot. Fig. 11, a,b,c,d.

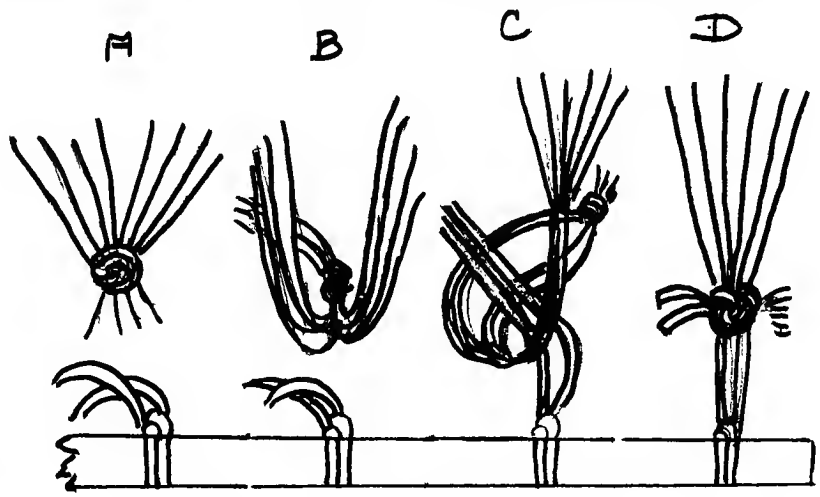

Fig 11

GLOSSARY OF WEAVING TERMS

APRON The material attached to the warp beam or the cloth beam to which the warp ends are tied. Chief purpose is to save warp.

BATTEN or BEATER The frame that holds the reed and which is used to pound the weft into place.

BEAM A horizontal bar of the loom. See Back beam, breast beam, cloth beam, and warp beam.

BEAMING The process of putting the warp on the beam.

BREAST BEAM The front beam over which the finished cloth passes on its way to the cloth beam.

BOUT The group of warp threads tied to one tape of section of the sectional warp beam. Usually consists of a number of warp ends necessary to make one inch of the fabric.

CLOTH BEAM The bar in the front of the loom on which the finished cloth is wound.

CROSS The criss-cross layering of the warp ends in order to hold them in regular order and prevent tangling.

DENT One opening in the reed. Reed sizes are noted by the number of these openings in an inch.

DRESSING The complete process of making the loom ready for weaving.

DRAWING IN or ENTERING The process of bringing the warp threads through the heddles and reed.

ENTERING HOOK A long needle like hook used to draw warp threads through the heddle eyes.

EYE The opening in the middle of the heddle. Sometimes called the mail.

HARNESS The frame and heddles hung in the proper order in the loom. Looms are often classified by the number of harnesses - 2-harness, 4-harness, etc.

HEDDLE (Headle, Heald) The arrangement for holding the warp threads in place to make a shed. They may be made of string, wire, or flat steel.

LEASE The cross in the warp.

LEASE RODS (Lease sticks) Long sticks which are put in to hold the cross while the warp ends are being entered through the heddles or reed or both.

LEASE PEG The pegs in a warping frame or reel between which the cross is made.

PORREY CROSS (Threading or entering cross.)

PORTEE Raddling or spreading cross.

RADDLE A device for spreading the warp threads evenly as they are wound on to the warp beam.

REED The comb-like part of the beater which holds the threads an equal distance apart and determines the fineness of the cloth. It also helps to beat the weft into place.

REEDING The process of drawing each warp thread through its proper dent.

SLEYING The process of placing the warp through the reed or the term to denote the number of warp ends per inch.

SNITCH KNOT The kind of knot used to tie lamms to harness or to pedals. It is a firm knot but one easily adjusted.

SPREADER See RADDLE.

TENSION The tightness or stretch of the thread during the weaving process.

THREADING HOOK A drawing-in hook or a reed hook.

TOP-CASTLE The top part of the loom from which the harnesses hang.

WARP The lengthwise threads of the cloth.

WARP BEAM The beam at the back of the loom on which the warp is wound.

WARPING The process of making a warp and putting it in the loom.

WARP END One warp thread.

WARPING FRAME A wooden frame with pegs evenly spaced on which warps are made.

WARPING REEL or **MILL** A revolving frame on which warps are made. Usually makes longer warps than a frame.

WARP CHAIN The looped or chained warp that has been taken from the frame or reel. It is made like a crocheted chain-stitch and prevents tangling.

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